



South & East Asia

**Defining A Reproductive
Health Package For India:
A Proposed Framework**

Saroj Pachauri

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New Delhi, India

The Population Council, a nonprofit, nongovernmental research organization established in 1952, seeks to improve the wellbeing and reproductive health of current and future generations around the world and to help achieve a humane, equitable, and sustainable balance between people and resources.

The Council analyzes population issues and trends; conducts research in the reproductive sciences; develops new contraceptives; works with public and private agencies to improve the quality and outreach of family planning and reproductive health services; helps governments design and implement effective population policies; communicates the results of research in the population field to diverse audiences; and helps strengthen professional resources in developing countries through collaborative research and programs, technical exchange, awards, and fellowships.

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Contents

Acknowledgements	5
Executive Summary	7
I. <i>Reproductive Health</i>	11
Concept, Framework and Ideology	11
Quality and Measurement	12
Reproductive Morbidity and Mortality	14
Recommended Package of Services	16
II. <i>Recommended Services for Prevention, Treatment and Management of Reproductive Health Problems</i>	21
Prevention and Management of Unwanted Pregnancy	23
Services for Safe Abortion	27
Services to Promote Safe Motherhood	29
Services to Improve Child Survival	34
Services to Reduce Perinatal and Neonatal Mortality	36
Nutritional Services for Vulnerable Groups	38
Prevention and Treatment of Reproductive Tract Infections and Sexually Transmitted Infections	40
Diagnosis and Treatment of Gynecological Problems	48
Screening and Management of Breast Cancer	50
Services for the Adolescent	50
III. <i>Critical Factors for Effective Implementation of Reproductive Health Services</i>	55
Health, Sexuality and Gender, Information, Education and Counseling	55
Establishment of Effective Referral Systems	56
IV. <i>Conclusion</i>	59
References	60

List Of Tables

Table 1	Changes in Key Parameters 1951 to 1992
Table 2	Services for the Prevention and Management of Unwanted Pregnancy at Different Levels of Health Service System
Table 3A	Antenatal Services at Different Levels of the Health Service System
Table 3B	Delivery Services at Different Levels of the Health Service System
Table 3C	Postpartum Services at Different Levels of the Health Service System
Table 4	Child Health Services at Different Levels of the Health Service System
Table 5	Services for the Prevention and Treatment of RTIs and STIs at Different Levels of the Health Service System

List Of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANM	Auxiliary Nurse Midwife
CHC	Community Health Center
HIV	Human Immunodeficiency Virus
ICDS	Integrated Child Development Services
IMR	Infant Mortality Rate
IUD	Intrauterine Device
MCH	Maternal and Child Health
MTP	Medical Termination of Pregnancy
NGO	Non-government Organization
PHC	Primary Health Center
RTI	Reproductive Tract Infection
SRS	Sample Registration System
STI	Sexually Transmitted Infection
TBA	Traditional Birth Attendant
UTI	Urinary Tract Infection
WHO	World Health Organization

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Executive Summary

Over the past decade, there has been a clearer articulation and definition of reproductive health as a concept and some thinking on the ways in which reproductive health problems should be addressed. The reproductive health concept received global acknowledgment at the International Conference of Population and Development at Cairo. The challenge now is to translate this concept into policies and programs.

A reproductive health approach means that people have the ability to reproduce and regulate their fertility; women are able to go through pregnancy and child birth safely; the outcome of pregnancy is successful in terms of maternal and infant survival and well being; and couples are able to have sexual relations free of the fear of pregnancy and of contracting disease.

This paper states that the focus of health programs should change from a population control approach of reducing numbers to an approach that is gender-sensitive and responsive to the reproductive health needs of clients. Reproductive health programs should aim to reduce the burden of unplanned and unwanted child-bearing and related morbidity and mortality.

An important implication for implementing reproductive health programs is to ensure that the quality of services is improved, particularly from the perspective of the user. There is a need to focus on women since they are the primary users of these programs and also have the greatest problem of access to health services. On the other hand, it is equally important to promote male responsibility and enhance the involvement of men.

To date, the impact of family planning programs has been measured mainly in terms of their contribution to increase contraceptive prevalence and to decrease fertility. These indicators are inadequate for measuring the impact of reproductive health programs and, therefore, new indicators for monitoring reproductive health services and service quality from the perspective of the client are urgently needed.

A framework for defining a package of reproductive health services that could be used in particular settings in India is proposed. No single package of services can be recommended for nationwide implementation as there is enormous diversity in India among the regions and states as well as between rural and urban areas. The criteria used for selecting particular health services included in the package are: levels of fertility and mortality; disease burden; cost effectiveness; and the capacity of the health infrastructure to deliver services effectively.

The rationale for suggesting a package approach is to enable program planners to: assess the feasibility and management implications of implementing various combinations of health services at different levels of the health system in diverse settings; and to examine the cost, financing and sustainability implications of implementing these health services. It is noted that while a package of reproductive health services may be defined, for operationalizing programs effectively fundamental changes in the health service system are needed to reflect the ethos and ideology that is embodied within the reproductive health approach.

Providing comprehensive reproductive health services to all is a desirable goal. However, since there is considerable variability in the organizational capacity of programs in the different regions and states of India, the extent to which a program might expand without compromising the quality and effectiveness of existing services must be seriously considered. There is a clear need to prioritize and develop a phased approach with an incremental addition of health interventions that require greater skills and resources.

Two packages of reproductive health services are discussed in the paper - a comprehensive package which, at present, would have limited application in India, and an essential package which is recommended for nationwide implementation. The essential package recommended includes the following reproductive health services: the prevention and management of unwanted pregnancy including safe abortion services; services for improving child survival and promoting safe motherhood; the prevention and treatment of reproductive tract infections and sexually transmitted infections; and reproductive health services for adolescents. Each of these services incorporates a number of different health interventions. Some can be implemented at the peripheral levels of the health service system, while others require more sophisticated skills and facilities and can, therefore, be implemented only at higher levels or at the peripheral level in areas with adequate facilities. Operations research should form an integral part of program implementation and experimental projects should be undertaken to assess the feasibility and effectiveness of implementing reproductive health services. The effective implementation of this package of services will have major implications for strengthening existing service capacity, especially the managerial capacity of the health system.

This paper discusses the rationale for recommending particular services in the national program and their importance and relevance to the Indian context. Important elements that are presently lacking but should be incorporated within the program to ensure the effective

implementation of reproductive health services are highlighted. Issues related to the implementation of these services at different levels of the health delivery system are discussed, particularly for those health interventions that are either inadequately implemented or are not currently included in the program. The importance of managing the quality of care in addressing clients' reproductive needs is underscored. The importance of health, sexuality and gender information, education and counseling together with the establishment of effective referral systems between the community and various levels of the health service system is also emphasized.

In this paper, the focus of the discussion is primarily on the role of government programs. However, the private sector and non-government organizations also play an important role in the provision of health care in the country. Consequently, it would be important to involve them as partners in this effort. The establishment of referral systems could be a starting point for developing linkages among the government health programs, non-government organizations, the community and institutions of the *Panchayati Raj* to promote decentralization in the planning and implementation of health programs. Decentralized programs accountable to the community and designed with the participation of different constituencies would be more effective in addressing community needs.

Currently, there are major information gaps ranging from the lack of understanding of the ethos and the concept of reproductive health and related gender issues, to questions about the changes necessary at the policy and program level to implement services. This lack of information deters the implementation of reproductive health programs. In a country as large and diverse as India, multiple constituencies must be informed and empowered before any process of social change can be significantly affected. Therefore, advocacy is needed at the central and state levels to engage decision-makers in policy dialogue. A range of different constituencies, including government and non-government organizations, as well as activists and researchers should be involved to catalyze a process of networking with a growing number of organizations so that programs relevant to client's needs can be designed with the active involvement and participation of all.



I. Reproductive Health

Concept, Framework and Ideology

The Concept

The past decade has witnessed a significant shift in the way population and reproductive health problems are conceptualized. There has been a clearer articulation and definition of reproductive health as a concept as well as some thinking on ways in which reproductive health problems should be addressed. Reproductive health terminology is now part of the rhetoric of many constituencies as there has been a growing discourse on issues related to population and reproductive health and more recently on sexual health. This discussion reached its pinnacle at the International Conference on Population and Development in Cairo where reproductive health as a concept and as an ideology received global acknowledgment. The challenge now is to translate this concept into policies and programs at the national level.

A reproductive health approach means that:

- people have the ability to reproduce and regulate their fertility;
- women are able to go through pregnancy and child birth safely;
- the outcome of pregnancy is successful in terms of maternal and infant survival and well being; and
- couples are able to have sexual relations free of the fear of pregnancy and of contracting disease (Fathallah, 1988).

The Framework

The proponents of the reproductive health framework believe that reproductive health is inextricably linked to the subject of reproductive rights and freedom, and to women's status and empowerment. Thus, the reproductive health approach extends beyond the narrow confines of family planning to encompass all aspects of human sexuality and reproductive health needs

during the various stages of the life cycle. In addressing the needs of women and men, such an approach places an emphasis on developing programs that enable clients to make informed choices; receive screening, counseling services and education for responsible and healthy sexuality; access services for preventing unwanted pregnancy, safe abortion, maternity care and child survival, and for the prevention and management of reproductive morbidity. Thus, reproductive health programs are concerned with a set of specific health problems, identifiable clusters of client groups, and distinctive goals and strategies.

The Ideology

A paradigm shift is needed for operationalizing reproductive health programs. A change in focus from a population control approach of reducing numbers to a client-based approach of addressing the reproductive health needs of individuals, couples and families, is necessary.

The reproductive health concept and ideology was globally endorsed at Cairo. The challenge now is to translate the concept into policies and programs at the national level.

Implementing reproductive health services within the national program in India would, therefore, require an ideological shift, which in turn would necessitate a change in the existing culture of the program from one that focuses on achieving targets to one that aims at providing a range of quality services. This agenda recognizes that fundamental policy changes are needed for its implementation; one that entails a shift of program focus from societal fertility reduction to an explicit concern for assisting individuals to meet their personal reproductive goals. At the aggregate level, it means that instead of remaining responsible for reducing the rate of population growth, reproductive health programs would become responsible for reducing the burden of unplanned and unwanted child bearing and related morbidity and mortality (Jain & Bruce, 1994). Social and economic policies must then become responsible for achieving a broad range of demographic goals at the macro-level.

Quality and Measurement

Reproductive health programs are designed to address clients' needs and, therefore, an important implication for their implementation is to ensure that the quality of services is improved, particularly from the perspective of the user. Several studies have highlighted the wide social and cultural gap that exists between the providers and users of services. In order to bridge this gap, more attention should be focused on the users' perspective within the overall framework of the service delivery system. There is a need to specially focus on women since they constitute the major client group or users of these programs and also have the greatest

problem of access, both physical and social, to health services (Pachauri, 1994a).

Quality is defined in terms of the way individuals and clients are treated by the system providing services (Jain & Bruce, 1989). Using this principle, Bruce (1990) has evolved a working definition of quality applicable to family planning services that incorporates six elements: choice of methods; information provided to clients; technical competence of service providers; interpersonal relations between service providers and clients; mechanisms to encourage

Implementing reproductive health services within the national program in India would require an ideological shift, which in turn would necessitate a change in the existing culture of the program from one that focuses on achieving targets to one that aims at providing a range of good quality services.

continuity of care; and an appropriate constellation of services to address the reproductive health needs of the users of these services. Although developed primarily for family planning programs, this framework is to a large extent valid for reproductive health programs also. However, some further refinements of the framework that are specific for reproductive health services would be needed. This framework views the individual-level outcome as a consequence of service-giving. It is based on the idea that the clients or users of services have a right to expect knowledge and satisfaction, and that fulfilling those expectations is the most valued aim of managers and service providers (Jain, 1992). A basic premise of this framework is that improvements in service quality will result in client satisfaction and will, over the long term, translate into higher contraceptive prevalence and ultimately in fertility reduction (Jain, 1992). However, if the broader reproductive health needs of clients can be addressed by providing good quality services, the program will be able to achieve the objectives of not only reducing fertility but also reducing reproductive morbidity and mortality.

India's demographic and health profile today is radically different to the conditions of the national family planning program when it was launched in 1951. During this period, mortality fell by nearly two-thirds, fertility declined by about two-fifths, and life expectancy at birth almost doubled. India's population has more than doubled since 1961. Mortality and fertility decline ran roughly parallel for many years, so that the population growth rate remained above 2 percent per year until 1991. By 1992, India had achieved 60 percent of its goal of replacement fertility (2.1 births per woman), with fertility having declined from about 6 to 3.4 births per woman (Table 1, overleaf). The contraceptive prevalence rate is 45.4 percent.

To date, the impact of the family planning program has been measured mainly in terms of its contribution to increase contraceptive prevalence and to decrease fertility. Since these

indicators do not reflect the impact of the program on morbidity and mortality, they are not adequate for measuring the impact of reproductive health services. Unless these criteria for the program's success or failure are modified, the program will continue to be guided by overall goals of reducing fertility by achieving targets.

Indicators for measuring the quality of health services from the perspective of the client are necessary. For example, if a client avoids unplanned or unwanted childbearing safely, without negative consequences to his or her health, the program is a success. Otherwise, it is a failure (Jain, 1992). The challenge is to find ways to synthesize this information. There is an urgent need to develop indicators that can be used to monitor reproductive health services. Pilot projects should be undertaken to test the feasibility, reliability and effectiveness of monitoring and evaluation systems, especially in those areas where contraceptive targets have been removed.

Reproductive Morbidity and Mortality

According to the World Bank, about one-third of the total disease burden in developing country

TABLE 1: CHANGES IN KEY PARAMETERS 1951 TO 1992			
<i>Parameters</i>	<i>1951-61</i>	<i>1981</i>	<i>1992</i>
Crude Birth Rate	41.7	37.2	28.7 (SRS 1993)
Total Fertility Rate	6.0	4.5	3.6 (SRS 1992)
Infant mortality rate (per 1000 live births)	146.0	110.0	74 (SES 1993)
Couple protection rate (%)	10.4 (1970-71)	22.8	45.4 (March 1994)
No. of births averted (estimated in millions)	0.04	44.4	168.8 (March 1994)
Life expectancy at birth (years)	41.3	50.5 (1971-81)	58.6 (1986-91)

Source: World Bank, 1995

women 15 to 44 years of age is linked to health problems related to pregnancy, childbirth, abortion, human immunodeficiency virus (HIV), and reproductive tract infections (RTIs). Among diseases for which cost-effective interventions exist, reproductive health problems account for the majority of the disease burden in women of this age group (World Bank, 1993). There are substantial data to show that Indian women bear a heavy burden of reproductive morbidity (Bang et al, 1989; Bang and Bang, 1991; Pachauri & Gittlesohn, 1994; Jejeebhoy and Rama Rao, 1992). The heavy load of reproductive morbidity among Indian women is an outcome of their poverty, powerlessness, low social status, malnutrition, infection, high fertility, and lack of access to health care. Thus, socio-economic and biological determinants operate synergistically throughout the lives of poor women to undermine their health, resulting in high levels of morbidity and mortality (Pachauri, 1994a).

The magnitude of women's reproductive health problems is reflected in the number of deaths related to pregnancy and childbirth, the most direct indicator of reproductive health care. India's maternal mortality ratio, usually estimated at 400-500 per 100,000 live births, is fifty

There is a need to specially focus on women since they constitute the major client group or users of reproductive health programs and also have the greatest problem of access, both physical and social, to health services. Indicators for measuring the quality of health services from the perspective of the client are necessary.

times higher than that of many developed countries and six times higher than that of neighboring Sri Lanka (Ascadi and Johnson-Ascadi, 1990). According to the National Family Health Survey, the maternal mortality ratio in 1992-1993 was 420 per 100,000 (International Institute of Population Studies, 1994). Expressed another way, a woman living in India runs a 300 times greater risk of dying in pregnancy and childbirth compared to a woman in the developed world. Mortality statistics, however, tell us only a part of the story. One small study conducted in India showed that for every woman who dies, an estimated 16 others develop various illness (Datta et al, 1980). Some pregnancy-related illnesses are life threatening while others are chronic and debilitating such as vaginal fistulas and uterine prolapse which cause terrible suffering. More research is needed to understand maternal morbidity risks as data on maternal morbidity are grossly lacking and community-based morbidity data for developing countries are almost non-existent.

Although there is a high burden of reproductive morbidity, cost-effective interventions are also becoming increasingly available. The challenge is to develop cost-effective packages of good quality services to address the needs of specific client groups in various settings and to make these available and accessible to all, and especially to the poor and the disadvantaged. Providing

comprehensive reproductive health services to all is a desirable goal but, since there is considerable variability in the organizational capacity of programs in the different regions and states of the country, the extent to which a program might expand without compromising the quality and effectiveness of existing services must be seriously considered. There is clearly a need to prioritize and to develop a phased approach with an incremental addition of health interventions that require greater skills and resources.

The discussion in this paper focuses primarily on the role of government programs. However, the private sector and non-government organizations (NGOs) also play an important role in the provision of health care in the country. Consequently, it would be important to involve them as partners in this effort. In addition, social marketing programs should also be redesigned to include products and information not only for family planning but also for RTIs including those that are sexually transmitted.

Recommended Package of Services

Rationale for Recommending a Package of Services

In this paper, an attempt has been made to develop a framework for defining a package of reproductive health services for the country. The criteria used for selecting particular health services included in the package are: cost-effectiveness; disease burden; levels of fertility and mortality; and the capacity of the health infrastructure to deliver services effectively. The rationale for suggesting a package approach is to enable program planners to: (1) assess the feasibility and management implications for implementing various combinations of health services at different levels of the health service system in diverse settings; and (2) examine the cost, financing and sustainability implications of implementing these health services.

As there is enormous diversity in India among the regions and states as well as between rural and urban areas, no single package of services can be recommended for nation-wide implementation. While in underserved areas such as in the northern states of India there is a continuing need to strengthen the health infrastructure and improve service access, in states with the better developed programs such as Tamil Nadu and Kerala, efforts should now be made to expand the range and quality of services provided. The availability of resources and the capacity of the existing health infrastructure to deliver services effectively would determine the choice of specific interventions and levels of technical complexity that can be effectively integrated within existing programs.

In the section that follows, two packages of reproductive health services are discussed: 1) a comprehensive package which at present would have limited application and 2) an essential package which is recommended for nationwide implementation. Even the essential package would require considerable managerial, technical and financial inputs for its implementation,

particularly in regions and states with weak infrastructural capacity (World Bank, 1995). The proposed framework could be used to design reproductive health programs that are feasible, affordable and effective in different contexts.

1) A Comprehensive Reproductive Health Services Package

Although a comprehensive reproductive health services package would at present have limited application in India, it is outlined in this paper for two reasons. First, because it is important to plan for the incremental addition of services in a phased manner particularly for the more advanced states as well as for urban areas with better facilities; and second, because it may be possible to implement this package of services in some selected areas. In areas where it is implemented, it is recommended that operations research be undertaken to concurrently assess the feasibility and effectiveness of the various health interventions included in this service package. The goal should be to expand the implementation of services incrementally and in a phased manner by utilizing research results and lessons learnt from program experience. The following services are included in a comprehensive reproductive health services package.

- Prevention and management of unwanted pregnancy
- Services to promote safe motherhood
- Services to promote child survival
- Nutritional services for vulnerable groups
- Prevention and treatment of reproductive tract infections and sexually transmitted infections
- Prevention and treatment of gynecological problems
- Screening and treatment of breast cancer
- Reproductive health services for adolescents
- Health, sexuality and gender information, education and counseling
- Establishment of effective referral systems

Clearly, this entire package of services, though desirable, would at present have limited application. This package of services could be tried in selected urban areas where there is a better availability of trained service providers and where it is possible to establish referral linkages with multiple health facilities that are operating in these areas. It could also be tried in selected districts of the more advanced states such as Kerala, Tamil Nadu and some others.

Each of the services in the recommended comprehensive package incorporates a number of interventions. Some of these interventions can be implemented at the peripheral levels of the health delivery system, while others require more sophisticated professional skills and facilities and can, therefore, be implemented only at the higher level or at the peripheral level in areas with adequate facilities. These issues are discussed in the following section. The last two services, health, sexuality and gender information, education and counseling and the

establishment of effective referral systems, are not separate services but are critical for the effective implementation of all the other reproductive health services within the service system.

It is recommended that operations research projects be undertaken in selected areas to assess the feasibility and effectiveness of implementing interventions included in this service package in order to document lessons learnt for improving the effectiveness of existing programs as well as for planning new programs. Some of the research questions to be addressed are: How can these interventions be operationalized? What are the short- and longer-range priorities? What strategies should be designed to address the diverse needs of populations in different regions and states? And what specific investments are needed? This package of services is recommended for adoption, in a phased manner, in selected districts of states with a higher resource and performance base. It should be concurrently evaluated to assess its feasibility and effectiveness. NGOs should be encouraged to work in partnership with the government and also to develop models of comprehensive reproductive health services. The feasibility and effectiveness of these models should be carefully assessed. In addition, the private sector should also be an active partner in the effort to provide high quality reproductive health services.

The effective implementation of this package of services has major implications for strengthening existing service capacity, especially the managerial capacity of the public system. For implementing this program effectively, there is a need to emphasize staff training and to put

Because there is tremendous diversity among regions and states as well as between urban and rural settings, no single package of services can be recommended. The proposed framework could be used for designing reproductive health programs for particular settings.

in place equipment and supplies that would be necessary for providing these services. There is an urgent need to strengthen the capacity of the delivery system at various levels to improve the quality of services, particularly from the perspective of the user of these services and also to ensure that there is better coordination among field level staff so that there is a convergence of services at the user's end. For example, services for the management of sexually transmitted infections (STIs) and HIV/AIDS prevention programs that have been recently initiated by the Health Department through the National AIDS Control Programme should be integrated with services provided for the prevention and management of unwanted pregnancy and the promotion of child survival and safe motherhood by the Department of Family Welfare as well as with the Integrated Child Development Services (ICDS) Programme which provides food supplements to vulnerable populations.

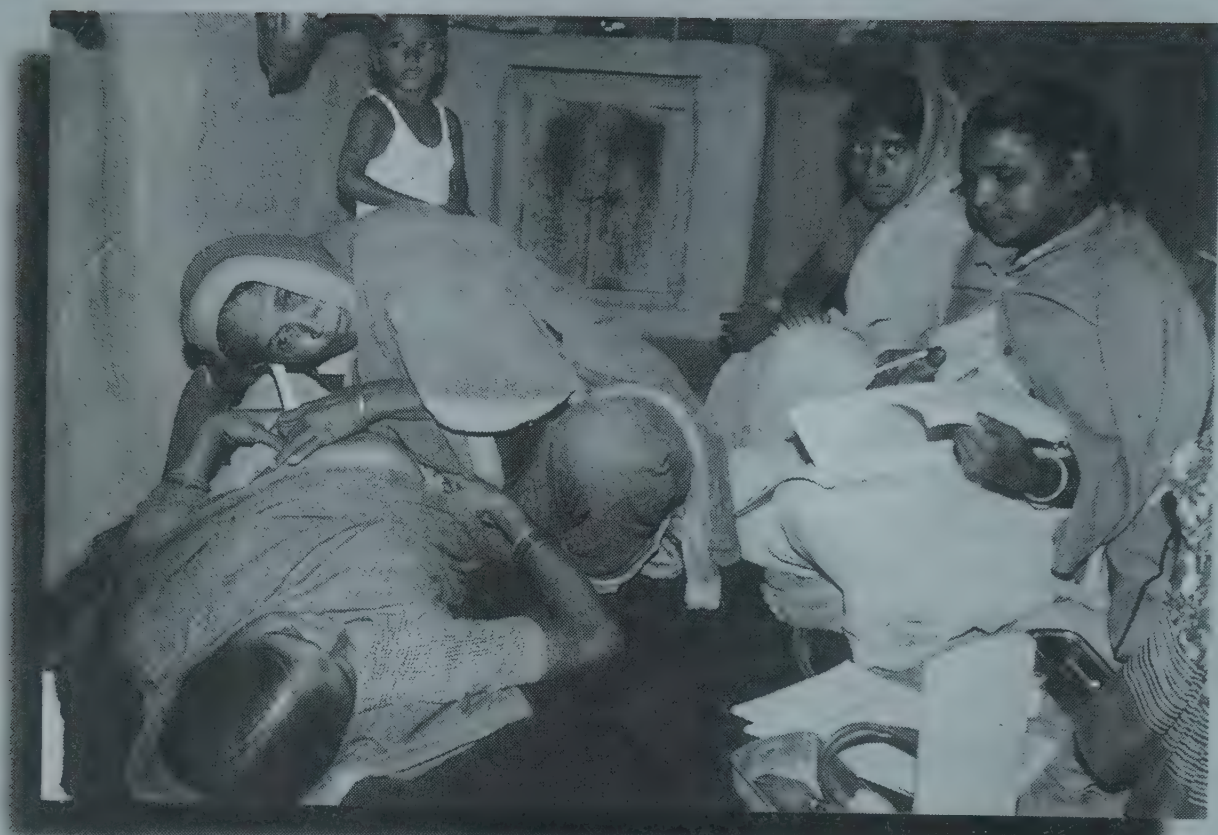
2) *An Essential Reproductive Health Services Package*

The following package of essential reproductive health services is recommended for nation-wide implementation.

- Prevention and management of unwanted pregnancy
- Services to promote safe motherhood
- Services to promote child survival
- Nutritional services for vulnerable groups
- Prevention and treatment of reproductive tract infections and sexually transmitted infections
- Reproductive health services for adolescents
- Health, sexuality and gender information, education and counseling
- Establishment of effective referral systems

All the services included in this package are presently recommended as a part of the government's Health & Family Welfare Programme. At present, limited reproductive health services for married adolescents are provided through this program. In addition, food supplementation programs are provided through the ICDS Programme. While all these services are theoretically included in the national program and are specified in the various policy and program documents, there have been serious problems with their implementation at various levels of the health delivery system. There is a vast body of literature that highlights the numerous structural and functional constraints that impede effective program implementation and these are well understood by policy planners and program managers. These constraints relate to access to services, program-client interactions, supervision and support, and program financing.

For the effective implementation of the essential package of reproductive health services, these issues must be addressed: First, the gaps in existing facilities must be filled and services expanded to areas that are not served. Second, where reproductive health services are provided, they must be adequately financed to ensure acceptable quality of care. The World Bank estimates that only 17 percent incremental costs are associated with the provision of additional services for moving the present family welfare program to a reproductive health approach. If the entire costs are borne by the public sector, an additional amount of 8.9 percent of recurrent costs per year in real terms would be needed for the program until the year 2000. These costs would be minimized if some reproductive health services are also provided by NGOs and the private sector (World Bank, 1995).



II. Recommended Services for Prevention, Treatment and Management of Reproductive Health Problems

In the section that follows, a rationale is provided for recommending particular health interventions in the package of essential health services and their importance and relevance in the Indian context is discussed. An attempt is also made to delineate important elements that are presently lacking and must be incorporated within the program to ensure the effective implementation of the recommended services. The discussion focuses on interventions within each service component that can be implemented at various levels of the health service system. Health interventions that can be implemented at the community, subcenter, primary health center (PHC) and community health center (CHC)/district/subdistrict hospital levels are delineated in tabular form (Tables 2-5). These tables and the discussion in the text provide a broad framework that could be used to design specific packages of reproductive health services for particular settings.

There are significant differentials among regions and states in the staffing patterns and facilities that are available at various levels of the health service system. In most areas at present, subcenter facilities are reasonably well organized but cases that cannot be managed at this level have to be referred to the subdistrict/district hospital which is usually at a considerable distance. The PHC is the weakest link in the chain. While one PHC catered to a population of about 100,000 in the past, according to the present norms there is one PHC for a population of 20,000-30,000 population. At present both old and the new PHCs exist. The old PHC has operation theater facilities, the latter does not. In fact, the new PHC is often an upgraded subcenter. The interventions recommended in the tables are feasible only at those PHCs that have an operation theater and related facilities. CHCs are few in number and have yet to be fully organized. There is an urgent need to upgrade PHC facilities and to develop more CHCs to improve access to reproductive health services.

According to the government's prescribed norms, in addition, to a voluntary worker who is paid an honorarium, there is a provision for one male and one female multipurpose worker at each subcenter. The female health worker is an auxiliary nurse midwife (ANM). A subcenter caters

to 5000 population in the plains and to 3000 population in hilly and tribal areas. The staffing norms for the new PHC that caters to 30,000 population in the plains and 20,000 population in tribal and hilly areas includes one medical officer, a pharmacist, a nurse midwife, a health educator, one male and one female health assistant and one male and one female health worker. The old PHCs have 1 to 3 physicians and more paramedical staff. The prescribed norms for staff at the CHC include: five qualified or specially trained doctors — a surgeon, an obstetrician gynecologist, a physician, a pediatrician, and a public health physician. In addition, there should be seven nurse midwives, a dresser, a pharmacist/compounder, a laboratory technician, and a radiographer at this facility. A CHC covers approximately 100,000 population (Government of India, 1995). The CHC is expected to have facilities for managing obstetric emergencies. Currently, there are very few CHCs with prescribed staff and facilities. Therefore, CHCs have been clubbed with subdistrict and district hospitals in Tables 2-5.

In many areas staff are not in place at PHCs and CHCs according to prescribed norms. There are particular gaps in the case of women physicians and male multipurpose workers. It is difficult to recruit women physicians for rural facilities. The government proposes to contract private physicians for PHCs and CHCs. The ANM is often the only staff member at the

There is a clear need to prioritize and to develop a phased approach with an incremental addition of health interventions that require greater skills and resources.

subcenter and, therefore, carries a heavy responsibility. Staff at the subcenter and PHC are expected to provide outreach services to the community. However, community health workers such as traditional birth attendants (TBAs), who are not a part of the formal health system, play an important role in providing reproductive health services at the community level.

It is not possible to reflect the true 'reality' in India because of the enormous variations, not only between states but also within states. Tables 2-5 show services that are available and those that should be included within the rural health system. No systematic attempt has been made in this paper to discuss how reproductive health services should be implemented in urban areas. Urban health in India has been neglected even though the urban poor are growing in numbers and are increasingly exposed to serious health risks.

Because there is tremendous diversity among regions and states and even within states as well as between urban and rural settings, no single package of services can be recommended. The proposed framework could be used for designing reproductive health service programs for particular settings in India. Interventions that are not presently implemented in most parts of the country have been highlighted in the tables. It should be noted, however, that latter are, in

fact, implemented in some areas but not in most parts of the country. These tables should be re-formatted for specific areas to design reproductive health programs and to highlight those interventions that require special attention. This framework could, perhaps, also be adapted for designing reproductive health services in some other developing countries.

Prevention and Management of Unwanted Pregnancy

The program currently relies heavily on female sterilization which is by far the most dominant method. However, there is a growing consensus among policy planners in India that the overriding emphasis on female sterilization in the present program is not likely to achieve the desired demographic goal of replacement fertility. A 'basket of services' is recommended to

For ensuring contraceptive safety the program must focus greater attention on all clinical procedures, especially on aseptic techniques and on screening clients for contraindications and pre-existing health problems. Developing effective outreach programs should be a high priority if counseling and follow-up services are to be provided, especially in rural areas.

enhance choice for women. A greater emphasis should, therefore, be placed on increasing method choice by including reversible contraceptive methods. Reversible methods are more likely to affect birth rates and also to improve maternal and infant health. These methods, however, require complementary attention to improving the quality of services and addressing clients' reproductive health needs.

Table 2 (overleaf) lists interventions for the prevention and management of unwanted pregnancy that are recommended for implementation at different levels of the health service system. Since there has been a particular emphasis in the program on providing family services, several interventions are already in place. However, to improve access and quality of services, there is a need to strengthen sexuality and gender information, education and counseling, expand method choice and develop effective referral systems. Essential elements that must be incorporated within a service delivery system that is designed to include reversible methods are discussed below.

Method Mix and Informed Choice

Since contraceptive needs and preferences of clients are different and change over time, a broad selection of reversible and irreversible methods should be available through a variety of service

**TABLE 2: SERVICES FOR THE PREVENTION AND MANAGEMENT
OF UNWANTED PREGNANCY AT DIFFERENT LEVELS OF
THE HEALTH SERVICE SYSTEM**

<i>Community Level</i>	<i>Subcenter Level</i>	<i>Primary Health Center Level</i>	<i>Community Health Center/District/Subdistrict Hospital Level</i>
<p>Sexuality and gender information, education and counseling</p> <p>Community mobilization and education for adolescents, youth, men and women</p> <p>Community-based distribution of contraceptives</p> <p>Social marketing of contraceptives</p> <p>Establishment of effective referral systems</p>	<p>Sexuality and gender information, education and counseling</p> <p>Expansion of contraceptive choice</p> <p>Provision of oral contraceptives and condoms</p> <p>Insertion of IUDs after screening for contraindications</p> <p>Counseling, management and referral for side-effects, method-related problems, and change of method where indicated</p> <p>Motivation and referral for sterilization</p> <p>Counseling and referral for medical termination of pregnancy</p> <p>Establishment of effective referral systems</p> <p>Management of referred cases and feedback to referral source</p>	<p>Sexuality and gender information, education and counseling</p> <p>Expansion of contraceptive choice</p> <p>Provision of oral contraceptives and condoms</p> <p>Insertion of IUDs after screening for contraindications</p> <p>Conducting vasectomy procedures</p> <p>Performing first trimester medical termination of pregnancy (upto 10 weeks)</p> <p>Counseling and management of cases referred for side-effects, method-related problems, and change of method where indicated</p> <p>Motivation and referral for tubal ligation</p> <p>Counseling and referral for second trimester pregnancy termination</p> <p>Establishment of effective referral systems</p> <p>Management of referred cases and feedback to referral source</p>	<p>Sexuality and gender information, education and counseling</p> <p>Expansion of contraceptive choice</p> <p>Provision of oral contraceptives and condoms</p> <p>Insertion of IUDs after screening for contraindications</p> <p>Conducting sterilization procedures</p> <p>Provision of first and second trimester medical termination of pregnancy</p> <p>Counseling and management of cases referred for side-effects, method-related problems, and change of method where indicated</p> <p>Establishment of effective referral systems</p> <p>Management of referred cases and feedback to referral source</p>

Note: Health interventions that are not a part of the present program are highlighted.

delivering points including commercial outlets. The recent National Family Health Survey shows that there is a large unmet demand for reversible methods (International Institute of Population Studies, 1994). Condoms and oral contraceptives can be provided through social marketing programs at the community level and should also be made available at subcenters.

Other methods, including permanent methods, should be available at PHCs and CHCs. The addition of injectables, progestin-only pills (for women who are breast feeding), barrier methods and spermicides should be considered in order to expand contraceptive choice and to meet the needs of younger, lower parity couples (Table 2). The threat of HIV/AIDS and the growing demand from women's groups for barrier methods make a strong case for including these methods in the basket of contraceptive services. Research shows that each new method added attracts new users and improves continuation rates. Analysis of data from seventy-two developing countries has shown that access to a range of methods greatly improved contraceptive prevalence (Freedman and Berelson, 1976).

For ensuring contraceptive safety, the program must focus on all clinical procedures especially aseptic techniques and on screening clients for contraindications and preexisting health problems. Developing effective out reach programs should be a high priority if counseling and follow-up services are to be provided, especially in rural areas.

With the availability of a real cafeteria of services, informed choice must form an important element of the program. Service providers should help clients make decisions for selecting contraceptive methods that are most appropriate for them. Clients should, therefore, receive information on the contraindications as well as on the advantages and disadvantages of contraceptive methods that are offered to them. Information should also be provided on what clients can expect from service providers with regard to advice, support, supply, treatment, referral and related services.

Contraceptive Safety

The objective of the program should be to provide people with the means to achieve their reproductive goals in a healthful manner (Jain & Bruce, 1994). Contraceptive safety is an essential requirement; the program must ensure that contraceptive services are delivered safely. At the very least, those reproductive health problems that are directly related to the provision of contraceptive services must be addressed by the program. For example, infections should not be caused or exacerbated by the provision of contraceptive methods. Ensuring service quality

and safety is specially important for all surgical procedures. Special care must also be taken for inserting intrauterine devices (IUDs), particularly in areas where RTIs and STIs are widely prevalent and when the client's RTI status is not known. Auxiliary nurse midwives (ANMs) should be trained to provide informed choice of methods, counseling and follow-up care. If the ANM is expected to insert IUDs at the subcenter as it is the case in several states, then subcenters must be provided with equipment to enable her to effectively perform this procedure and special training programs must be organized to ensure that she can develop the skills for inserting IUDs safely.

A woman must be free of contraindications to the IUD which must be inserted under aseptic conditions to prevent infection. Follow-up of acceptors must be regular and continuous as these women are at greater risk of infection because RTIs can be exacerbated by the presence of IUDs. IUDs can lead to increased menstrual bleeding, the increase being greater for women with anemia, thus aggravating this condition (Zurayk, et al, 1994). For ensuring safety therefore, the program must focus greater attention on all clinical procedures, especially on aseptic techniques and on screening clients for contraindications and pre-existing health problems.

Counseling and Follow-up

Supportive counseling and follow-up services are essential elements of a program designed to provide quality care, particularly for reversible methods. After the clients have made or reconfirmed their choice of the method, counseling should concentrate mainly on the services which they would receive on the proper use of the method. Follow-up services are especially important in the initial period for providing advice and managing side-effects. Clients should have access to service providers if they experience method-related problems and should have the freedom to switch methods for which supportive counseling should be provided.

It is necessary to plan convenient follow-up contacts with clients and encourage them to approach service providers at any time when they need to discuss their fears or problems. Follow up visits are a good opportunity for continuing counseling and education and for discussing related reproductive health issues that were not dealt with in the first visit. These visits also provide an opportunity to discuss alternative choices if the client is not satisfied with the method which is being used. Developing effective outreach should be a high program priority if counseling and follow-up services are to be provided, especially in rural areas.

Male Participation and Responsibility

Special efforts should be made to encourage men to take responsibility for family planning. Vasectomy is a simpler and safer procedure than tubectomy but the latter is, by far, the most dominant method in the national program. Health providers should be pro-active by making special efforts to reintroduce vasectomy into the program and should encourage men to accept

responsibility for family planning, reproduction and child care. Their fears and anxieties regarding vasectomy should be allayed through counseling. In addition, the condom should be promoted as a method to provide dual protection against both pregnancy and infection. For those at risk of STIs, condoms should be advised even if the client or partner has been sterilized or is using another family planning method such as the IUD or oral contraceptives.

Given that gender inequalities favor men in most societies in India and that sexual and reproductive health decisions are made by men, there is a growing realization that unless men are reached, program efforts would have limited impact. Research on sexuality, especially in the field of HIV/AIDS, has highlighted the inadequacy of strategies that target only women who are usually subordinate to men and, therefore, cannot effectively negotiate changes in sexual behavior. Research on sexual negotiation has dramatically underscored the need for involving men in programs that aim at bringing about changes in sexual behavior for the prevention of infection.

However, such behavioral change is relevant not only for the prevention of infection but also

Given that gender inequalities favor men in most societies in India and that sexual and reproductive health decisions are made by men, there is a growing realization that unless men are reached, program efforts would have limited impact.

for addressing other reproductive health problems. Other areas that should be examined include working with men on concepts of masculinity and sexuality; opening up health care, education and social welfare programs to increase the influence and acceptance of men; working with communication systems to change images of the role of men as husbands and fathers; and legal and political reforms.

Services for Safe Abortion

The Medical Termination of Pregnancy (MTP) Act was passed by the Indian Parliament in 1971 but what was thought to be a landmark in social legislation, has failed to translate into reality for the majority of Indian women, particularly in rural areas. Today, there are more illegal abortions in India than there were prior to the MTP Act with about 15,000-20,000 abortion-related deaths occurring annually, mainly among married, multiparous women. (Chhabra and Nuna, 1994). These figures show that there is a vast unmet need for contraception and safe abortion. Table 2 indicates that counseling and referral services for MTP should be organized at the peripheral levels of the health care system. Services for first trimester abortion should be made available at PHCs and facilities for second trimester abortions at CHCs.

Unsafe abortion is an important cause for maternal mortality and results in high levels of maternal morbidity in India. In large part, this is due to the failure of the program to integrate MTP services with family planning services. About 11-12 percent of maternal deaths in rural India are due to septic abortion (Government of India, 1990). Septic abortions account for upto 25 percent of all maternal deaths in hospital studies in India (Bansal and Sharma, 1985; Mathur and Rohatgi, 1981; Kamalajayaram et al, 1988). Community-based data, which would provide more accurate estimates, are not available. Although unsafe induced abortion is the greatest single cause of mortality for women, it is also the most preventable. Women need not die or suffer medical consequences from abortions because abortions do not kill women; it is, rather, unsafely performed abortions which kill (Maine 1991).

Expanding family planning services is an important strategy for decreasing pregnancy related mortality and morbidity. The infant mortality rate could be significantly reduced by decreasing the number of pregnancies, by spacing births and by delaying the age at first pregnancy. Estimates show that if all women who state that they want no more children were able to avoid future pregnancies, there would be a substantial decline in maternal mortality (Maine et al, 1987). However, even with vigorous family planning programs, there will always be some unwanted pregnancies, and therefore, a demand for abortion. High levels of maternal mortality associated with clandestine, unsafe abortions can be prevented by enhancing women's access to safe abortion services. The conceptual link between family planning and abortion is fundamental. Effective contraception is an important means of preventing an unwanted

Unsafe abortion is an important cause of maternal mortality and results in high levels of maternal morbidity in India. While public sector programs should be strengthened to provide safe abortion services, there is an urgent need to improve the quality of services provided by the private sector as private practitioners are by far the most important providers of abortion services in the country.

pregnancy and pre-empting the need for abortion, but in the absence of safe abortion back-up, women will continue to be forced to employ unsafe means for terminating unwanted pregnancies with attendant high maternal mortality and morbidity (Pachauri, 1993).

A recent report on abortion shows that poor women in India, particularly in rural areas, do not have access to safe abortion services. Some of the important programmatic constraints that have limited access are: rigid bureaucratic control; an inflexible approach; inadequate funding; lack of training of health care providers; and poor monitoring of MTP services. The following recommendations have been made for improving access to safe abortion services:

- Equitable, need-based services should be organized country-wide.
- The process of recognition of physicians and institutions to provide MTP services should be decentralized to the district level.
- The presently elaborate confidential recording and reporting procedures should be simplified.
- Women should be ensured the right to emergency care in life-threatening circumstances.
- First trimester abortion services should be made widely and easily available and there should be a clear differentiation between first and second trimester abortions for the registration and organization of facilities.
- The net of service providers who can be trained to deliver MTP services in the early first trimester should be widened.
- The MTP Act should be reexamined and reframed to remove legal, bureaucratic and medical constraints. (Chhabra and Nuna, 1994).

While public sector programs should be strengthened to provide safe abortion services, there is an urgent need to examine the quality of services provided by the private sector and to organize training programs for private practitioners, as they are by far the most important providers of abortion services in the country.

Services to Promote Safe Motherhood

Although maternal and child health (MCH) services form an integral part of the Family Welfare Programme, the program has focused primarily on efforts to improve child survival. Maternal health has suffered from relative neglect in this program. There is, therefore, an urgent need to strengthen maternity care services. Tables 3A, B & C list interventions that should be implemented at various levels of the health service system to promote safe motherhood.

Maternity Health Services

Services for maternity care should be designed to ensure timely detection, management and referral of complications during pregnancy, delivery and the postpartum period. Because of their impact on the health of the mother and the child, maternity services are highly cost-effective. Providing antenatal, delivery and postpartum services costs less than \$2000 per death averted (World Bank 1993). Virtually all interventions to improve women's health in pregnancy, labor and delivery have positive impacts on pregnancy outcome and child health but the reverse is not the case. Maternity services have received minimal attention in the National Family Welfare Programme. In recent years there has been an effort to remedy this neglect with the implementation of the safe motherhood initiative. This program must now receive priority within the family welfare strategy. The following services need immediate attention:

ANTENATAL SERVICES

In Table 3A interventions that should be implemented at the community and subcenter level are highlighted since many women do not have access to higher level facilities. In addition, the need for strengthening two-way referral systems, especially for complicated pregnancies and interventions for the management of STIs and RTIs, (especially, screening for syphilis during the antenatal period, to prevent maternal and neonatal morbidity and mortality) are highlighted in this Table since these services are not being implemented in the program at present.

Antenatal services should be organized to detect and manage complications related to pregnancy such as anemia, infection, pre-eclampsia, malpresentation and obstructed labor. Women should be educated about the danger signs of pregnancy and provided information on where to seek help. Antenatal visits should provide an opportunity to offer advice and counseling on hygiene, breastfeeding, nutrition, family planning and immunization as well as to treat pre-existing conditions such as diabetes and infections such as malaria and tuberculosis that are commonly prevalent, may be aggravated by pregnancy, and may complicate pregnancy (World Bank, 1994).

There is no universal protocol for the content and timing of antenatal care. However, an essential minimal package of antenatal services must be implemented. [WHO is currently undertaking a large research project which should shed some light on this issue within the next few years.] There should be at least 3-4 antenatal examinations by a health care provider. The first visit should take place as soon as pregnancy is detected, preferably before 10 weeks to confirm the pregnancy; provide nutritional advice and supplements; and provide the first dose of tetanus toxoid immunization. A second visit is recommended at 20-24 weeks to detect and treat abnormalities; to identify and refer cases with complications; and to provide the second tetanus toxoid injection. A visit at 28-32 weeks would enable the service provider to detect malpresentation and to diagnose and treat maternal illnesses. An antenatal visit should be made at 36-38 weeks to confirm the position of the fetus; to make an assessment of cephalopelvic disproportion; and to manage maternal illnesses.

The number and content of antenatal visits should be expanded in accordance with the availability of trained staff and facilities at PHCs and CHCs. Equipment and supplies should be made available at all these health facilities, including at the subcenter. To manage antenatal cases effectively, the ANM must have essential equipment and supplies. The subcenter must be equipped for examining hemoglobin, blood pressure, urine albumin and sugar, and for checking body weight and height.

Outreach services should be strengthened to ensure that all women are registered as early in pregnancy as possible and antenatal care initiated. In addition, PHC's must also be upgraded to manage some complications and provide facilities for delivery.

**TABLE 3A: ANTENATAL SERVICES AT DIFFERENT LEVELS
OF THE HEALTH SERVICE SYSTEM**

<i>Community Level</i>	<i>Subcenter Level</i>	<i>Primary Health Center Level</i>	<i>Community Health Center/District/Subdistrict Hospital Level</i>
<p>Counseling and education for breastfeeding, nutrition, family planning, rest, exercise, etc.</p> <p>Detection and referral of cases with complicated pregnancies</p> <p>Immunization for tetanus prevention</p> <p>Birth planning</p>	<p>Counseling and education for breastfeeding, nutrition, family planning, rest, exercise, etc.</p> <p>Immunization for tetanus prevention</p> <p>Treatment of malaria</p> <p>Birth planning</p> <p>Provision of antenatal services at clinics and through outreach (at least 4 visits)</p> <p>Detection and referral for complications, e.g., hypertension, preeclampsia, eclampsia, severe anemia, malaria, tuberculosis, diabetes, antepartum hemorrhage and cephalopelvic disproportion</p> <p>Detection and referral of women with RTIs and STIs</p>	<p>Counseling and education for breastfeeding, nutrition, family planning, rest, exercise, etc.</p> <p>Immunization for tetanus prevention</p> <p>Detection and referral of cases with complicated pregnancies</p> <p>Birth planning</p> <p>Treatment of malaria</p> <p>Treatment of tuberculosis</p> <p>Provision of antenatal services at clinics and through outreach (at least 4 visits)</p> <p>Detection and management of complications, e.g., hypertension, preeclampsia, malaria, tuberculosis and diabetes</p> <p>Referral for hospital delivery in cases with complications</p> <p>Routine testing for syphilis</p> <p>Diagnosis and treatment of selected RTIs and STIs, and referral for others</p> <p>Management of referred cases and feedback to referral source</p>	<p>Counseling and education for breastfeeding, nutrition, family planning, rest, exercise, etc.</p> <p>Immunization for tetanus prevention</p> <p>Birth planning</p> <p>Provision of antenatal services at clinics (at least 4 visits)</p> <p>Management of cases with complications</p> <p>Treatment of malaria</p> <p>Treatment of tuberculosis</p> <p>Routine testing for syphilis</p> <p>Diagnosis and treatment of RTIs and STIs</p> <p>Management of referred cases and feedback to referral source</p>

Note: Health interventions that are not a part of the present program are highlighted.

SAFE DELIVERY SERVICES

All deliveries must be managed by trained birth attendants. Normal deliveries can be managed at home or at an institution but in all cases infection must be prevented by ensuring clean delivery practices. Because complications can develop without warning, it is critical to put in place effective systems to ensure timely referral and management of emergency complications. Death from hemorrhage, for example, can occur within two hours of the onset of bleeding. Establishing effective referral systems for life-threatening complications is, therefore, critical for saving women's lives. Communities should be involved in organizing timely transportation for women needing care to the referral facilities.

As a part of the safe motherhood initiative, first-level referral units (FRUs) with specialists and equipment are now being established to treat complicated pregnancies and obstetric emergencies in selected states and districts. Innovative approaches are needed to attract specialists to work at these rural units and to expand their reach so that peripheral level institutions can be upgraded to provide specialist care.

However, the vast majority of births in India take place at home. The National Family Health Survey shows that in 1992-93 only 25.6 percent of all births and 16.1 percent of all rural births were conducted in institutions and as many as 65 percent were delivered by traditional birth attendants (International Institute of Population Studies, 1994). An immediate priority therefore, is to ensure safe home delivery by trained birth attendants. Traditional birth attendants must be trained to recognize danger signs and ensure timely referral to FRUs. Programs should, therefore, be organized to ensure that all pregnant women are registered in the first trimester of pregnancy; are provided antenatal services; and those with complications are referred for specialized services to FRUs. Guidelines for operationalizing FRUs have been developed by the Department of Welfare (Government of India, 1993). In Table 3B several interventions to be implemented at the community and subcenter levels are highlighted because most deliveries are conducted at home. The need for conducting clean home deliveries using safe delivery kits and the importance of recognizing danger signals for emergency obstetric care are highlighted in the table.

POSTPARTUM SERVICES

To date, postpartum programs in India have focused primarily on providing family planning services. These programs have had limited success because they have not been designed to address women's reproductive health needs. Postpartum programs should include services for the early detection and management of infection and hemorrhage; support for breastfeeding for at least six months; nutrition counseling; and family planning services. Educating women, their families, birth attendants, and community health workers to recognize early signs of complications and seeking care for hemorrhage and infection, for example, may be lifesaving.

**TABLE 3B: DELIVERY SERVICES AT DIFFERENT LEVELS
OF THE HEALTH SERVICE SYSTEM**

<i>Community Level</i>	<i>Subcenter Level</i>	<i>Primary Health Center Level</i>	<i>Community Health Center/ District/Subdistrict Hospital Level</i>
Detection of pregnancy complications and referral for hospital delivery Clean home deliveries with delivery kits Recognition of danger signals (rupture of membranes of more than 12 hours duration, prolapse of the cord, hemorrhage) and referral Routine prophylaxis for gonococcal infection in the newborn Arrangement of transport for referral	Detection of pregnancy complications and referral for hospital delivery Clean home deliveries with delivery kits Recognition of danger signals (rupture of membranes of more than 12 hours duration, prolapse of the cord, hemorrhage) and referral Supervision of home deliveries by ANMs Routine prophylaxis for gonococcal infection in the newborn Treatment of infection Arrangement of transport for referral	Detection of complications and referral for hospital delivery Clean home deliveries Supervision of home deliveries by ANMs Treatment of infection Routine prophylaxis for gonococcal infection in the newborn Arrangement of transport for referral Management of referred cases and feedback to referral source	Provision of institutional delivery services Treatment of pregnancy complications Management of obstetrical emergencies Routine prophylaxis for gonococcal infection in the newborn Arrangement of transport for obstetrical emergencies Management of referred cases and feedback to referral source

Note: Health interventions that are not a part of the present program are highlighted.

Antibiotic treatment is sufficient to cure infection in more than 80 percent of cases if taken within four days of the onset of fever (Winikoff et al, 1991). ANMs must, therefore, be trained to treat and to refer cases.

If postpartum programs are designed to respond to women's needs and preferences, they will be better utilized. In addition to providing follow-up and counseling services immediately after

birth, these programs should be organized to provide health services and information for the mother and the infant up to the fortieth day after birth which is culturally considered to mark the end of the postpartum period. In most communities, special social events are organized to celebrate the birth of a child. Postpartum services may be better accepted if they are linked with such religious and cultural activities. In Table 3C, a number of interventions that should be implemented through outreach care and are required for the detection and referral of complications in women as well as for the management of the newborn with complications, are highlighted.

All deliveries must be managed by trained birth attendants and postpartum programs should be designed to respond to women's needs and preferences. Because complications can develop without warning, it is important to put in place effective systems to ensure timely referral and management of emergency complications.

With a few exceptions, maternity benefits schemes have not been provided for women in the non-formal sector in India. However, the government now proposes to launch a national scheme to provide maternity benefits to all women for their first and second births.

Services to Improve Child Survival

Services to improve child survival are included in the reproductive health package because several interventions for improving child survival, particularly those designed to reduce perinatal and neonatal mortality, are related to maternal health and thus to improving women's reproductive health.

The child survival program in India has received considerable attention during the past decade and there have been significant declines in infant mortality. The infant mortality rate (IMR), however, varies significantly between urban and rural areas and between regions and states. There are considerable variations even within states. Therefore, efforts to extend program coverage must be continued with particular emphasis on states with higher IMR. In areas where significant mortality reduction has been achieved, however, further declines in IMR will only occur if additional reproductive health interventions are implemented. The focus of the child survival program in India has, so far, been on controlling immunizable and diarrheal diseases, and more recently, on managing acute respiratory infections. Thus, efforts have primarily been directed at reducing post-neonatal mortality. The program should now begin to focus its efforts also on reducing perinatal and neonatal mortality, particularly in those states where there have been significant mortality reductions. These interventions are linked to maternal health status

**TABLE 3C: POSTPARTUM SERVICES AT DIFFERENT LEVELS OF
THE HEALTH SERVICE SYSTEM**

<i>Community Level</i>	<i>Subcenter Level</i>	<i>Primary Health Center Level</i>	<i>Community Health Center/District/Subdistrict Hospital Level</i>
Provision of postnatal care through four postpartum visits (less than 24 hours, 7-10 days, 3-4 weeks and 5-6 weeks) Provision of breastfeeding support Provision of family planning, counseling and services Provision of nutrition education and supplements Management of mild and moderate asphyxia of the newborn Management of neonatal hypothermia Outreach care within 24 hours of delivery by subcenter or PHC staff Management of low birth weight (2000-2500 grams) infants by feeding, temperature control and infection prevention measures Detection and referral for complications	Provision of postnatal care through four postpartum visits (less than 24 hours, 7-10 days, 3-4 weeks and 5-6 weeks) Provision of breastfeeding support Provision of family planning, counseling and services Provision of nutrition education and supplements Treatment of puerperal sepsis Management of mild and moderate asphyxia of the newborn Management of neonatal hypothermia Treatment for some and referral for other complications	Provision of postnatal care through four postpartum visits (less than 24 hours, 7-10 days, 3-4 weeks and 5-6 weeks) Provision of breastfeeding support Provision of family planning, counseling and services Provision of nutrition education and supplements Management of women referred with complications Treatment of puerperal sepsis Resuscitation for asphyxia of the newborn Management of neonatal hypothermia Referral for complications Management of referred cases and feedback to referral source	Provision of postnatal care through four postpartum visits (less than 24 hours, 7-10 days, 3-4 weeks and 5-6 weeks) Provision of breastfeeding support Provision of family planning, counseling and services Provision of nutrition education and supplements Treatment of puerperal sepsis Manual removal of retained placenta Resuscitation for asphyxia of the newborn Management of neonatal hypothermia Management of referred cases and feedback to referral source

Note: Health interventions that are not a part of the present program are highlighted.

and are, therefore, a part of the reproductive health services package. Table 4 lists interventions that should be implemented at different levels of the health service system for improving child survival.

Services to Reduce Perinatal and Neonatal Mortality

Perinatal and neonatal mortality constitutes a significant proportion, 50-60 percent of all infant mortality. Prematurity and growth retardation, important causes of death in the first month of life (the neonatal period), are inextricably related to the health of the mother. Therefore, interventions for improving maternal health must be implemented in order to reduce neonatal and perinatal deaths. Maternal malnutrition and infection which have a synergistic impact on pregnancy outcome are important risk factors. Other causes of neonatal death are asphyxia, birth injuries, infection of the newborn and congenital defects.

Maternal Nutrition

The effect of pre-pregnancy weight and weight gain during pregnancy on birth weight and pregnancy outcome has been well documented (Pachauri and Marwah, 1971). Studies show that continued heavy work during pregnancy coupled with low dietary intake may adversely affect maternal nutrition and the course and outcome of pregnancy because of the energy deficit due to the gap between energy intake and energy expenditure (Gopalan, 1962).

The association between anemia and low birth weight, prematurity, perinatal mortality and maternal mortality has been extensively documented in India. In hospital studies, high mortality has been reported for pregnant women who have anemia (Rao, 1975; Sen Gupta and Gode, 1987). Indian studies show that a fall in maternal hemoglobin below 11 gms/dl is associated with a significant rise in the perinatal mortality rate. There is usually a two to three-fold increase in perinatal mortality when maternal hemoglobin levels fall below 8 gms/dl and an eight to ten-fold increase when maternal hemoglobin levels fall below 5 gms/dl. Maternal mortality rates show a steep rise when maternal hemoglobin levels fall below 5 gms/dl (Prema, et al 1981). The prevention of anemia is clearly a priority but strategies implemented in the past have not demonstrated impact. Evaluation of the anemia prophylaxis program shows that the prevalence of anemia during pregnancy has remained essentially unaltered over the past three decades (Indian Council of Medical Research, 1989). Therefore, the strategies used for this intervention should be re-evaluated.

Anemia antedates pregnancy, gets aggravated during pregnancy, and the repeated succession of rapid pregnancies and lactation perpetuate the problem. Serious problems of reaching pregnant women with supplements as well as of compliance has raised some questions on whether pregnancy is the best time for offering interventions to prevent anemia in women. Studies show that women continually bear an enormous burden of anemia. In a World Health

Organization (WHO) study for instance, the mean hemoglobin level reported for all ages and parity groups in India was 7.5 gms/dl or less (Omran and Stanley, 1976).

Waiting to treat anemia until pregnancy, when hemoglobin drops physiologically, ensures that more women will have more severe anemia. The anemia prophylaxis program in India has targeted women only during pregnancy. Anemia continues to be widely prevalent because nothing is done to improve the nutrition of the young girl, the growing adolescent, the married woman before her first pregnancy, between pregnancies and after pregnancy (Winikoff, 1988). It is, therefore, recommended that programs for nutrition education and micronutrient supplements such as iron and folic acid, should be targeted to all women in the reproductive age group and also to adolescent girls. For improving nutritional status, there should be a greater emphasis on nutrition education programs and on reaching and targeting pregnant and lactating women as well as adolescent girls for food supplementation programs.

Perinatal and neonatal mortality constitutes a significant proportion, 50-60 percent of all infant mortality. Prematurity and growth retardation, important causes of death in the first month of life, are affected by the health status of the mother. Because of their impact on the health of the mother and the child, maternal health services are highly cost-effective.

Maternal Infection

Maternal immune depression and increase in morbidity due to infections have been reported in women with hemoglobin levels below 8 gms/dl (Prema, et al, 1982). Immune depression due to anemia and the consequent increased morbidity due to infection, especially urinary tract infections (UTIs) and RTIs, are factors responsible for low birth weight in anemic women. Screening for, and effectively treating infections in anemic women should, therefore, result in improved pregnancy outcome. As almost every RTI has been associated with prematurity and/or growth retardation (Wasserheit, 1989), services for the diagnosis and treatment of RTIs may present a relatively cost-effective intervention for reducing neonatal mortality particularly in areas with high levels of RTIs.

Services for the Newborn

Services for the newborn have received scant attention in the national program although recommendations for organizing essential neonatal services were made more than a decade ago. A task force, set up by the Ministry of Health and Family Welfare, made recommendations

for providing minimum perinatal care in 1982 (Government of India, 1982). This task force recommended strategies for strengthening perinatal care through a three-tier system. It recommended that level I care should be available to all and should comprise four antenatal examinations at 20, 30, 34 and 38 weeks of gestation when the mother should receive immunization against tetanus, nutritional advice and supplements, and should be assisted to plan for her delivery. Neonatal services should be provided to ensure adequate cardio-respiratory effort, control of temperature, asepsis, cord care, weight record and physical examination to identify cases with complications including congenital defects. The ANM and the traditional birth attendant (TBA) should be trained to provide minimal, first level care at home or at the subcenter level and to refer cases with complications.

Level II care should be provided at CHCs or upgraded PHCs with better facilities and skilled manpower. Regional perinatal centers with trained neonatologists, laboratory facilities and intensive care units should provide level III care. Only a few selected regional centers can be recommended for level III care because of the high cost and sophistication of facilities that are needed for providing tertiary care. However, low-cost neonatal care facilities have been successfully organized at the district and subdistrict hospitals on a pilot basis in Tamil Nadu (Rajan, 1995). The feasibility and effectiveness of such pilot projects for reducing perinatal and neonatal mortality should be assessed in other states. Table 4 lists child survival interventions to be implemented at various levels of the health service system and highlights the importance of detection and referral of newborns with complications to prevent mortality. In addition routine prophylaxis for gonococcal infection is recommended for the prevention of eye infections. The cost-effectiveness of this intervention is discussed in the section on prevention and treatment of RTIs and STIs.

Nutritional Services for Vulnerable Groups

Food supplementation programs for pregnant and lactating women are organized at the village level through the Integrated Child Development Services (ICDS) Programme which presently covers about 40 percent of the community development blocks in the country. Closer linkages should be developed between health workers and ICDS workers to ensure that women receive food supplements at least in areas where the ICDS Programme is implemented. Nutrition education programs and iron and folic acid supplements are provided through the MCH program nationwide. A detailed discussion on nutritional services for reducing maternal and infant mortality and morbidity is provided in earlier sections. The scope of these programs should be expanded to include not only pregnant and lactating women but all women. In addition, nutritional interventions should also be organized for adolescent girls. Improving the nutritional status of the girl child would clearly have an important health impact.

In some states such as Tamil Nadu, mid-day meal programs are implemented for school children. Plans are underway to implement the National Programme of Nutrition Support for

TABLE 4: CHILD HEALTH SERVICES AT DIFFERENT LEVELS OF THE HEALTH SERVICE SYSTEM

<i>Community Level</i>	<i>Subcenter Level</i>	<i>Primary Health Center Level</i>	<i>Community Health Center/District/Subdistrict Hospital Level</i>
<p>Health education for breast-feeding, nutrition, immunization, etc.</p> <p>Provision of immunization</p> <p>Supplementation of Vitamin A</p> <p>Treatment of diarrhea without dehydration</p> <p>Treatment of some upper respiratory infections</p> <p>Management of mild and moderate asphyxia and low birth weight infants (2000-2500 grams)</p> <p>Provision of routine prophylaxis for gonococcal infection</p> <p>Referral of infants with complications</p>	<p>Health education for breast-feeding, nutrition, immunization, etc.</p> <p>Provision of immunization</p> <p>Supplementation of Vitamin A</p> <p>Treatment of diarrhea with mild/moderate dehydration</p> <p>Provision of first aid for injuries, etc.</p> <p>Treatment of some upper respiratory infections</p> <p>Treatment of mild and moderate asphyxia and management of low birth weight infants (2000-2500 grams)</p> <p>Provision of routine prophylaxis for gonococcal infection</p> <p>Referral of infants with complications</p>	<p>Health education for breast-feeding, nutrition, immunization, etc.</p> <p>Provision of immunization</p> <p>Supplementation of Vitamin A</p> <p>Treatment of diarrhea</p> <p>Treatment of acute respiratory infections</p> <p>Provision of first aid for injuries, etc.</p> <p>Treatment of infection</p> <p>Management of referred cases</p> <p>Referral of infants with complications</p> <p>Treatment of asphyxia and management of low birth weight infants (2000-2500 grams)</p> <p>Provision of routine prophylaxis for gonococcal infection</p> <p>Management of referred cases and feedback to referral source</p>	<p>Health education for breast-feeding, nutrition, immunization, etc.</p> <p>Provision of immunization</p> <p>Supplementation of Vitamin A</p> <p>Treatment of diarrhea</p> <p>Treatment of acute respiratory infections</p> <p>Treatment of infection</p> <p>Provision of first aid for injuries, etc.</p> <p>Treatment of infants referred with low birth weight, asphyxia, infections, severe dehydration, acute respiratory infections, etc.</p> <p>Provision of routine prophylaxis for gonococcal infection</p> <p>Management of referred cases and feedback to referral source</p>

Note: Health interventions that are not a part of the present program are highlighted.

Primary Education nation-wide. Improving the nutritional status of the child would clearly have an important health impact. Such programs would also provide an incentive for parents to send their children to school and to reduce the school drop-out rates, especially for girls. The links between women's education and reproductive health, especially with fertility and child mortality are well established. These programs should, therefore, have important positive consequences.

Prevention and Treatment of Reproductive Tract Infections and Sexually Transmitted Infections

Services for the prevention and treatment of RTIs and STIs are not currently implemented. However, early efforts are underway to develop these services. Because experience with these services is, at present, limited, a more detailed discussion is provided on the rationale for including these services as well as on strategies to integrate these services within existing programs. The linkages between services for the prevention and treatment of RTIs and STIs and family planning and MCH services are also discussed.

Recent years have witnessed a growing concern for RTIs, especially those that are sexually transmitted. The serious threat of the acquired immune deficiency syndrome (AIDS) has drawn attention to the importance of STIs. RTIs and their sequelae are inextricably intertwined with key health programs, such as those concerned with family planning, child survival, women's health, safe motherhood, and HIV prevention. RTI syndromes have profound implications for the success of each of these initiatives and conversely, these initiatives provide a critical opportunity for the prevention and control of RTIs. From the program and policy perspective, therefore, RTIs could offer a strategically important common element for reproductive health programs. However, substantial political will and commitment, profound changes in scientific approaches, sexual behavior, and gender power relations are necessary to achieve these program goals (Germain et al, 1992).

Strong programmatic and epidemiological reasons have been put forward for considering family planning and MCH services as an appropriate focal point for the prevention and control of RTIs and STIs: First, these services require access to the same client groups - sexually active populations.

Second, providers of these services require similar skills for addressing the needs of their clients. Third, both aim at modifying sexual behavior. Fourth, condoms and other barrier methods and spermicides are common technologies presently available for the prevention of STIs and unwanted pregnancies. And finally, since these infections can seriously affect the health of the mother and the newborn child, their diagnosis and management during pregnancy is particularly important. These infections can result in infertility, chronic pelvic inflammatory disease, ectopic pregnancy and can adversely affect child survival by causing pre-term delivery

of low birth weight, immature infants. The special risk of HIV in women, particularly during pregnancy, the increasing number of HIV infections resulting from mother-to-child transmission, the rising numbers of children affected by AIDS, and the fact that HIV can be transmitted through breast milk, are problems that have serious implications for maternal health and child survival (Pachauri, 1993b).

Reproductive Tract Infections and Family Planning

There are many areas of strategic interdependence between initiatives concerned with RTI morbidity and family planning programs. RTIs may decrease acceptance and continuation of contraceptive methods either directly when the client believes that the symptoms of infection are a contraceptive side-effect or indirectly, by creating a fear of limiting or delaying fertility because of frequent complications of RTIs, which prevent healthy childbearing (Germain, et al, 1992). Several researchers have discussed the effect of infertility on contraceptive

RTIs, STIs and their sequelae are inextricably intertwined with key health programs, such as those concerned with family planning, child survival, safe motherhood, and HIV prevention.

acceptance (Caldwell et al, 1989; Rosenberg et al, 1986). Such effect is more evident in communities with high levels of infertility where studies show that women are most likely to attribute RTI symptoms to their contraceptive method (Bhatia, 1982; Hopcraft et al, 1973). These findings indicate that programs for the diagnosis and treatment of RTIs may be essential to the success of family planning programs.

By compromising fertility, pregnancy outcome and child survival, RTIs may decrease the demand for contraception. If symptoms of RTIs are perceived as side-effects of contraceptive methods, there is likely to be high discontinuation of these methods. Real or perceived association between RTIs and contraceptive methods, particularly in settings where women suffer from high levels of RTI morbidity and where family planning programs do not have the facilities for RTI screening and treatment, can seriously jeopardize the use of methods such as the IUD. While screening of potential IUD acceptors for RTIs is recommended for all programs and is routinely carried out in developed countries, it is not a part of family planning services provided in resource-poor settings where the risks are high and where such screening is most needed. Several studies have shown that women in India bear the symptoms of RTIs silently without seeking any health care. While some of this reflects a lack of an awareness and a fatalistic approach that this is a 'woman's lot in life,' it also reflects the reality that there are no facilities where women can seek treatment. (Pachauri, 1994a).

The prevalence and consequences of RTIs also form an important dimension in an expanded

concept of unmet need. In a recent essay, Ruth Dixon-Mueller and Adrienne Germain define a broader scope of unmet need. They argue that the concept of unmet need should include recognizing the need among non-users at risk of unwanted pregnancy for any method of contraception, as well as the need among some users for a more effective, satisfactory, or safer method; the need among both users and non-users for treatment of contraceptive failure (or non-use) through safe and accessible abortion services; and the need for related reproductive health services such as the prevention and treatment of RTIs (Germain and Dixon-Mueller, 1992).

Reproductive Tract Infections, Maternal Health, and Child Survival

A working group convened by the WHO to examine cost-effective interventions for reducing maternal and infant infectious morbidity concluded that five cost-effective interventions are available, of which the first four concern infectious morbidity related to RTIs. These are prophylaxis against gonococcal ophthalmia neonatorum (eye infections in the newborn), prenatal screening and treatment for maternal syphilis, training of traditional birth attendants, hepatitis B immunization of infants, and immunization of mothers with tetanus toxoid to prevent neonatal tetanus (WHO, 1992).

Schultz and co-workers compared the seriousness of problems caused by RTIs in developing countries with that of infectious diseases currently addressed by donor agencies, and surmised that not only are the problems caused by RTIs at least as serious as those caused by the immunizable diseases currently addressed, but several RTI interventions are also more cost-effective. The cost per child for full immunization in developing countries was estimated to vary

Strong programmatic and epidemiological reasons have been put forward for considering family planning and MCH services as an appropriate focal point for the prevention and control of RTIs and STIs.

between US \$5 and \$15 (EPI, 1985). The cost effectiveness estimates for immunizable diseases ranged from \$40 to \$150 per adverse outcome averted. By comparison, in many locations in the Third World, \$1.40 would avert one case of gonococcal neonatorum and \$12 would avert an adverse outcome associated with syphilis during pregnancy. While women's health benefits were not computed in these cost-effectiveness analyses, synergistic effects to the woman in many instances would enhance the attractiveness of the interventions proposed (Schultz et al, 1992).

Sexually Transmitted Infections and HIV/AIDS

The AIDS pandemic has emphasized the urgent need for increased support for policy, research

and education for the prevention and control of STIs. It has highlighted the importance of sexual transmission in the spread of infection as well as the lack of control programs for STIs in many parts of the world (Piot et al, 1992). In their search for a possible explanation of the ravaging AIDS pandemic, professionals have begun to unravel several linkages between HIV and STIs. During the last decade, research on the relationship between HIV and other STIs has revealed several important findings. Research studies show that the sexual transmission of HIV may be facilitated by the presence of other STIs, which perhaps partly explains the differing rates of spread of HIV around the world (Piot et al, 1992). On the other hand, the natural history of STIs and their response to treatment may be altered by HIV (Laga, 1992).

Based on a number of baseline surveys and a review of the available scientific literature, the annual incidence of STIs in India is estimated at 5 percent, which indicates that approximately 40 million new infections occur every year. The brunt of the burden of direct and long-term morbidity related to STIs is borne by women. Women suffer more complications, and in much larger numbers than men, women suffer asymptomatic or mildly symptomatic infections. As many as 50 percent of women with gonococcal infection are asymptomatic, and for infections with chlamydia this number is even higher (van Dam, 1994).

Although limited research data are available on STIs in India, studies have shown that the range of positive syphilis serology among women attending antenatal clinics ranged from 1.1 to 4.8 percent in different cities. In a study in Jaipur, 13.6 percent antenatal clinic cases had candidiasis, 13.2 percent had trichomoniasis, 1.6 percent had gonorrhea, and 1.6 percent had syphilis (van Dam, 1995). There was generally a relatively low awareness of reproductive and sexual health among women, and their access to non-stigmatizing health services was severely restricted. It is recommended that initially STI services should be provided to symptomatic women, but depending on the availability of simple diagnostic tools, these services should subsequently be extended to asymptomatic women as well (van Dam, 1994).

The essential elements of a control program for sexually transmitted infections are:

- information, education and communication for the promotion of safer sexual behavior, including consistent condom use; and the promotion of appropriate health care seeking behavior especially for individuals with STI related symptoms, and those at increased risk of infection;
- provision of clinical services for the diagnosis and treatment of symptomatic and asymptomatic patients and their partners; and
- provision of condoms of good quality at affordable prices (van Dam, 1994).

In the past, because of the complexity of diagnosis and the expense of treatment, RTI and STI interventions have appeared to be beyond reach. However, recently proposed alternatives that simplify case management of STIs such as using a syndromic approach for diagnosis and algorithms for treatment (WHO, 1991) could make selected interventions feasible and

affordable at the primary health care level, particularly if the cost of early diagnosis and treatment is compared with that of treating complications and sequelae of STIs (Piot & Rowley, 1992). Over and Piot concluded that a program of STI treatment could be highly cost-effective if it was targeted at high-prevalence groups. They recommended that outside such groups, case management strategies should focus on improved case finding in order to reduce the cost per case identified. Women who attend family planning and MCH clinics or who are seen at primary health care facilities would be a prime target group for such case finding programs (Over and Piot, 1993).

Recommendations for Management of RTIs and STIs

RTIs and STIs are currently treated at several health centers in urban areas as well as at the district and subdistrict hospitals and at CHCs in rural areas. In most cases, these diseases are treated symptomatically by physicians in government and private clinics. With the serious threat of AIDS, the government has more recently begun to strengthen programs for the prevention and management of STIs. Since strategies for the management of RTIs and STIs are very similar, it is recommended that the latter also be included in government programs. What is needed now is to organize these services more systematically; upgrade laboratory diagnosis and treatment facilities; and establish effective referral linkages. The objective is to interrupt the transmission of infection and prevent the occurrence and consequences of STIs. Strategies for control include health education; counseling; disease detection through screening; case-finding and diagnosis by clinical and laboratory procedures; treatment of cases; and the management of sexual contacts. Table 5 lists interventions that can be implemented for the management of RTIs and STIs at different levels of the health service system. Since services for the prevention and treatment of these infections have been neglected in the past and not currently implemented, many of the interventions in the table are highlighted.

The training of health functionaries at various levels of the health delivery system is an essential requirement for the successful implementation of these services. Therefore, training needs should be assessed and programs designed to train health care providers. Health workers at all levels should be trained to recognize symptoms of RTIs and STIs and to use appropriate treatment and referral protocols. Health workers should also be trained to counsel clients on condom use; identify sexual contacts; and assist in the notification of partners. The National AIDS Control Organization has developed training modules for service providers and has recently initiated training programs. The effectiveness of these training programs should be systematically assessed and programs expanded.

The skills required by various service providers would necessarily differ at different level facilities. For example, an ANM at the subcenter could be trained to effectively screen clients for various family planning methods; recognize contraindications; refer clients for the diagnosis and management of specific problems; and provide counseling and follow-up

services. While an ANM would not be able to diagnose specific RTIs and STIs, she could be trained to suspect the presence of an infection from the client's history and clinical examination (such as the presence of a vaginal discharge) and refer suspected cases for diagnosis and treatment. There are some examples of NGO programs where ANMs and even TBAs have been successfully trained to treat RTIs by symptoms (Bang, 1994). Pilot projects should also be

TABLE 5: SERVICES FOR THE PREVENTION AND TREATMENT OF RTIS AND STIS AT DIFFERENT LEVELS OF THE HEALTH SERVICE SYSTEM			
<i>Community Level</i>	<i>Subcenter Level</i>	<i>Primary Health Center Level</i>	<i>Community Health Center/District/Subdistrict Hospital Level</i>
<p>Sexuality and gender information, education and counseling for adolescents, youth, men and women</p> <p>Community-based condom distribution</p> <p>Social marketing of condoms</p> <p>Routine prophylaxis for gonococcal infections of the newborn</p>	<p>Sexuality and gender information, education and counseling for adolescents, youth, men and women</p> <p>Provision of condoms</p> <p>Pilot testing of the syndromic approach</p> <p>Referral of women with vaginal discharge, lower abdominal pain and genital ulcers, and men with urethral discharge, genital ulcers, and swelling in the scrotum or groin</p> <p>Partner notification and referral</p> <p>Routine prophylaxis for gonococcal infections of the newborn</p>	<p>Sexuality and gender information, education and counseling for adolescents, youth, men and women</p> <p>Provision of condoms</p> <p>Pilot testing of the syndromic approach</p> <p>Diagnosis and treatment of some infections and referral of others</p> <p>Partner notification, treatment and referral</p> <p>Routine syphilis testing in antenatal women</p> <p>Routine prophylaxis for gonococcal infections of the newborn</p> <p>Management of referred cases and feedback to referral source</p>	<p>Sexuality and gender information, education and counseling for adolescents, youth, men and women</p> <p>Provision of condoms</p> <p>Laboratory diagnosis and treatment</p> <p>Pilot testing of the syndromic approach</p> <p>Partner notification and treatment</p> <p>Routine syphilis testing in antenatal women</p> <p>Routine prophylaxis for gonococcal infections of the newborn</p> <p>Management of referred cases and feedback to referral source</p>

Note: Health interventions that are not a part of the present program are highlighted.

undertaken in government programs to assess the feasibility and effectiveness of training paramedical workers to use the syndromic approach and risk assessment techniques for the diagnosis and management of selected RTIs and STIs at the subcenter level.

Routine screening and treatment of syphilis during prenatal care is recommended for areas with high prevalence. The cost-effectiveness estimates for treatment of syphilis vary greatly, depending upon its prevalence, assumptions about the risk of transmission, and the case-detection strategy used. Screening for syphilis using the Rapid Plasma Reagin (RPR) test, which provides immediate results, followed by treatment with penicillin (where indicated), has been found to be a simple and inexpensive approach with significant payoffs for infant health (Schulz et. al, 1992).

Schulz and co-workers have estimated the cost of this intervention for 1,000 pregnant women at 10 percent seroprevalence to be \$600. If the intervention was perfectly effective, it could prevent 17 spontaneous abortions, 19 perinatal deaths, and 14 syphilitic infants for every 1,000 pregnant women. The cost for 1,000 pregnant women at 1 percent seroprevalence is \$420 and in this case, the intervention would prevent two spontaneous abortions, two perinatal deaths,

Routine screening and treatment of syphilis during prenatal care is recommended for areas with high prevalence. Routine antibiotic prophylaxis for gonorrhea in the newborn, a cost-effective intervention, is also recommended.

and two syphilitic infants (Schultz et al, 1992). However, such a program could not be expected to be perfectly effective because women may attend the prenatal clinics late, sporadically, or never and also because some women and their partners may not be treated. Also, the screening test is not 100 percent sensitive and specific. Nonetheless, this intervention reduced adverse outcomes by 61 percent in Lusaka (Hira et al, 1990).

The most serious consequence of gonorrhea in pregnant women is the occurrence of ophthalmia neonatorum, a severe eye infection that can cause blindness in newborns. Routine antibiotic prophylaxis for this condition in the newborn, which costs only \$1.40 per case averted, is recommended (Table 4) rather than screening and treatment of all pregnant women (Schulz et. al, 1992). The prevalence of gonococcal infection in pregnant women in developing countries is reported to be between 0.5 and 22 percent. At least 30 percent of infants exposed to the infection during birth, develop gonococcal eye infections if prophylaxis is not given (WHO, 1984). When the mother is concurrently infected with gonococcus and chlamydia the transmission rate to the newborn is significantly higher -- 68 percent vs. 31 percent (Schultz et al, 1992).

The Syndromic Approach for Management of STIs

WHO has developed a simplified syndrome-based approach for management of patients with STIs to provide health workers with a tool to improve the diagnostic process. Syndromic management is based on identifying consistent groups of symptoms and easily recognized signs - syndromes - and providing treatment which will deal with the majority of organisms responsible for producing each syndrome. Since the syndromic approach is based on symptoms, it is not applicable for women who are infected but do not have any symptoms. Syndromic management for urethral discharge in men and genital ulcers in men and women has proved to be useful. It has resulted in adequate treatment of more infected cases. It is relatively simple and cost-effective. Field trials are also underway to determine the sensitivity and specificity of an approach based on an assessment of risk that the patient is infected.

First level management of STIs using the syndromic approach should be organized at the PHC and possibly at the subcenter levels. Syndrome-based treatment of both urethral discharge (most commonly caused by gonorrhea and chlamydia) and genital ulcer disease in symptomatic men is recommended. Symptomatic women with genital ulcers or pelvic inflammatory disease should also be diagnosed and treated using clinical algorithms developed by WHO. By following the step-by-step guidelines developed by WHO, health workers can match patients' symptoms with those for locally prevalent STIs and provide treatment accordingly. In the better developed regions and states, PHCs should be upgraded to provide laboratory services for the diagnosis and treatment of selected RTIs and STIs such as syphilis, trichomona vaginalis, candida albicans and bacterial vaginosis. At least those infections that can be diagnosed by microscopic examination should be treated at PHCs.

Comprehensive services for diagnosis and management of RTI and STI should be organized

There is an urgent need to implement pilot projects to assess the feasibility, effectiveness, and cost of the syndromic approach for the management of symptomatic STIs in different settings. Addressing the problem of asymptomatic infections, which are common among women, presents a greater challenge.

at district hospitals and referral centers including medical colleges and other selected institutions. Drugs for treating STIs should be included in the national list of essential drugs and drug distribution should be encouraged through commercial channels and subsidized. There is an urgent need to implement pilot projects to assess the feasibility, effectiveness, and cost of the syndromic approach for the management of symptomatic STIs in different settings. Addressing the problem of asymptomatic infections, which are common among women, presents a greater challenge.

WHO has recommended STI management protocols for the PHC level (WHO, 1991). However, if the ANM at the subcenter level is expected to carry out pelvic examination for IUD insertion, she could, perhaps, be trained to use some of these protocols for the management of STIs in women (van Dam, 1995).

Diagnosis and Treatment of Gynecological Problems

Services for gynecological problems are presently provided at district and subdistrict hospitals and other CHCs. Services for the management of selected gynecological problems should be organized at PHCs, especially at those PHCs that have women physicians. Counseling and referral services for gynecological problems related to menstrual hygiene, safe abortion, safe delivery and the prevention of RTIs and STIs should be provided at the PHC level. At the subcenter level, ANMs should be trained to detect problems and to refer cases. In addition, referral systems should be established between subcenters, PHCs and CHCs where facilities are available for the diagnosis and treatment of gynecological problems.

Services for the prevention and treatment of a number of gynecological problems, such as RTIs and STIs and those related to pregnancy, delivery and abortion complications have been discussed in other sections of the paper. Services should be designed to address particular problems of adolescents, including unmarried adolescents as programs for this target group begin to be developed. Gynecological problems of older women, who have passed the reproductive period, have yet to receive the attention of researchers and program planners. Problems related to menopause and those that occur in the post-menopausal period and later years have received scant attention in India. Research should be undertaken to study these problems and to identify those that should receive attention. The magnitude of specific problems as well as the cost-effectiveness and feasibility of organizing services should be addressed. Some criteria should be developed to determine which service interventions should receive priority and how services can be incrementally expanded to address particular priority problems.

While a detailed discussion of gynecological problems is not within the scope of this paper, a discussion of priority problems including RTIs and STIs as well as those related to pregnancy, delivery and the postpartum period is provided in the sections above and a brief discussion of key issues related to cervical cancer and infertility in the section below.

Screening and Treatment of Cervical Cancer

Cancer is one of the three leading causes of adult female mortality in both developed and developing countries. While breast cancer is the most frequently occurring cancer among women in the industrialized countries, cervical cancer is the most common malignancy in developing countries where it accounts for 20 to 50 percent of all cancers and 80 to 85 percent

of all malignancies of the female genital tract (Belsey and Royston, 1987). In India, the incidence of cervical cancer ranges from 15.4 to 46.5 per 100,000 women (Indian Council of Medical Research, 1990).

There is an established association between RTIs and cervical cancer (Mishra and Sinha, 1990; Indian Council of Medical Research, 1990; Murthy et al, 1990). Early onset of sexual activity and multiple sexual partners increase the risk of cervical cancer (Menon et al, 1988). The high incidence of cervicitis that is not due to conventional STI pathogens, has also been postulated as a risk factor for cervical cancer among Indian women (Luthra et al, 1992). There is an established causal link between the human papilloma virus and cervical cancer.

Cervical cancer screening is an important intervention for prevention but at present very limited screening facilities are available to Indian women. While 15 percent of the world's cervical cancer cases exist in India, screening facilities are available only to a very small minority of urban women. Research is needed to identify simple and effective screening procedures and to determine the minimum, and thus the most cost-effective frequency of screening required for detecting and treating cervical cancer.

Indian researchers have focused on evaluating what is referred to as down-stage screening for the early detection of invasive cancers by the visual inspection of the cervix before symptoms of cervical cancer develop (Luthra and Sehgal, 1990). This research shows that it is possible to identify a significant proportion of cases for referral through such screening of signs and symptoms (Luthra et al, 1988). While more studies are needed to assess the feasibility and effectiveness of using auxiliary health workers to detect and refer suspected cancer cases from rural areas, the early results of such research in India indicate that there is a potential for implementing this strategy (Luthra et al, 1990). There is an urgent need to implement pilot projects for assessing the feasibility and effectiveness of screening and management of cervical cancer in different urban and rural settings.

Prevention and Treatment of Infertility

Since child-bearing is highly valued and childlessness can have devastating consequences for Indian women, infertility is perceived to be a very serious problem. Infertility could be a sequela of STIs and also an outcome of poor obstetric and gynecological practices, particular illegal abortions resulting in infection. Little research is available on these causes of infertility. Programs for the prevention and control of RTIs and STIs and for safe abortion and safe delivery services would have an important impact on preventing infertility. These programs could be implemented at different levels of the health service system including at the peripheral levels (as discussed in earlier sections of the paper), to prevent infertility in women. Genital tuberculosis is an important cause of infertility in India. Therefore, services for the prevention and treatment of tuberculosis would also have an important impact on preventing infertility.

Diagnosis and treatment of all causes of infertility requires sophisticated facilities and, therefore, services for treating women who have primary or secondary infertility can only be provided in select institutions where such facilities exist. Some efforts are underway to plan a few centers with such facilities. The focus of primary health care programs should be on the prevention of infertility.

Screening and Management of Breast Cancer

Breast cancer is a serious problem worldwide and a growing problem in India. Research on this problem is limited to a few hospital-based cancer registries which show an incidence of 15-25 per 100,000 (Gulati, 1994). There are some data to show that Indian women get breast cancer about a decade earlier than their western counterparts. The mean age of occurrence is about 42

While breast cancer is the most frequently occurring cancer among women in the industrialized countries, cervical cancer is the most common malignancy in developing countries where it accounts for 20 to 50 percent of all cancers and 80 to 85 percent of all malignancies of the female genital tract.

years in India compared to 53 years in white women (Park & Park, 1991). The problem of breast cancer has not received any attention in the national health program. However, some efforts should be initiated to address this growing problem. A beginning could be made in urban settings where facilities are available. Pilot projects should be undertaken to examine the issues involved in organizing programs for the screening and management of breast cancer. Some of the questions to be addressed in such pilots are: How should women be taught to do self examinations? How can women be screened at peripheral institutions by auxiliary personnel? How should referral systems be organized for women who require investigations and treatment? And what are the cost implications of organizing programs for the screening and management of breast cancer?

Service for the Adolescent

Rationale for Providing Reproductive Services to Adolescents

The adolescent period is important for several reasons. Adolescent girls are exposed to the hazards of pregnancy when they are not emotionally and physically ready for child-bearing. Early age of marriage results in a high incidence of teenage births in India (Government of India, 1988). Teenage pregnancy poses serious health hazards for the mother and child

(Pachauri and Jamshedji, 1981; Nair et al, 1963; Ghosh and Ghosh, 1976). A majority, nearly two-thirds, (according to some data) of 6-14 year old girls in the countries of the Indian sub-continent are anemic and a considerable proportion of the anemia in this group is of a moderate or severe degree (Gopalan, 1992). Adolescents, therefore, constitute an important segment of the population for whom reproductive health programs should be designed and implemented.

Thus far, the Indian adolescent has been bypassed by all health programs. During 1990, the Year of the Girl Child, planners and researchers focused on the problems of the adolescent girl in India and some efforts were initiated to address the special needs of this important target group. Health programs for the adolescent girl have special significance because these programs would not only affect the health and nutrition of the adolescents themselves, but would also have long-term intergenerational effects by reducing the risk of low birth weight and minimizing subsequent child mortality risks (Gopalan, 1989 and Srikantia, 1989). It is suggested that integrated programs for health, education, employment and other related services should be provided for adolescents (Gopalan, 1984).

In most developing countries, while the needs of children and pregnant women are acknowledged in national strategies and programs, the unique health needs of the critical population 10-19 years of age are usually overlooked or expected to be integrated with services for children or adults. In India, neither services nor research have focused on the adolescent's health and information needs. In a country in which adolescents 10-19 years of age represent almost one quarter of the population, the consequences of this neglect take on enormous proportions (Jejeebhoy, 1994).

Adolescent Fertility

There are several notable features of adolescent fertility in India. First, almost all adolescent fertility occurs within marriage. Second, fertility among adolescents is high, contributing to a significant proportion of overall fertility in the country. Research results suggest that one in ten adolescents, irrespective of marital status, and one in four married adolescents 15-19 years of age are already mothers. In 1981 there were over 13 million currently married adolescent girls and as a result of early marriage and social pressures on early childbearing, there were over three million adolescent mothers in the country. Third, although there are signs of declining adolescent fertility rates, fertility declines among adolescents appears to be more gradual than among older women. Fourth, despite declining adolescent fertility rates, the absolute numbers of adolescent mothers in India continue to increase as a result of population growth. And fifth, complications of pregnancy are systematically higher among adolescents than among adult women (Jejeebhoy, 1994).

Finally, while little is known about fertility among unmarried adolescents as a special group, existing anecdotal and qualitative accounts suggest that the situation of unmarried adolescent

mothers and their children is particularly bleak. For example, unmarried adolescents constitute a sizable proportion of abortion seekers. What is especially disturbing is the fact that unmarried adolescents are more likely than older women to delay seeking abortion services because of ignorance about where to go for services, fear of social stigmatization, and a lack of awareness that a pregnancy has occurred (Jejeebhoy, 1994). Studies in Bombay (Divekar et al, 1979), Solapur (Solapurkar and Sangam, 1985) and Baroda (Bhatt, 1978) show that adolescents are significantly more likely than older women to have a second trimester abortion. Studies also suggest that a growing proportion of adolescents, boys in particular, experience STIs (Jejeebhoy, 1994).

Adolescents constitute an important segment of the population for whom reproductive health programs should be designed and implemented.

Data on contraceptive practice among adolescents are restricted to information on currently married adolescents 15-19 years of age. These data indicate that few adolescents practice contraception. The 1988 national survey of family planning practices (Operations Research Group, 1990) reports that nationally, no more than 8.6 percent of married girls 15-19 years of age were using contraception. Thus, adolescents are far less likely to practice contraception than are older women, including women 20-24 years of age. However, issues related to family planning are different for adolescents than for older women because some of the fertility is wanted fertility, especially among married adolescents. First births, which are of higher risk and lead to poor pregnancy outcome are concentrated in this group.

Programs for Adolescents

Programs designed to address the reproductive health needs of adolescents face special challenges since they must take into account complex and often conflicting factors such as:

- the roles and preferences of parents and community leaders in providing information to adolescents;
- the widely varying social situations and sexual behavior of adolescents since, married adolescents, unmarried adolescents, street kids, and abused young people have different reproductive health needs;
- the conflicting pressures and confounding information that influence adolescents' behavior; and
- gender differences and societal norms for sexual behavior and access to information and services.

Program experience on reaching adolescents is limited. Some NGO programs and government programs have attempted to redress this gap. There is, for example, a non-formal education program for girls. More recently, the ICDS Programme has extended its activities to include

adolescent girls. The ICDS Programme, originally intended to provide nutritional supplementation and health and nutrition education for pregnant and lactating women and nutritional supplementation and early childhood education for their pre-school aged children, has recently expanded its services to incorporate programs for out-of-school adolescent girls, 11-18 years of age. This program operates through Girls' Clubs (Balika Mandals) in 507 blocks at present. Its activities, however, are limited to the provision of nutritional supplementation and health check-ups, along with some health education. While training is a major component of the program for 15-18 year old adolescents, the content of this training is focused on motherhood skills such as nursing, first aid, child health and nutrition care. Reproductive health and sexual issues are not addressed. Despite its limitation, the program is notable because, for the first time, the needs of adolescent girls have been specifically addressed in a government program. The experience of this program should be carefully documented. The ICDS Programme presently covers about 40 percent of India's rural population and, therefore, offers considerable potential for upscaling.

With the advent of AIDS, several NGOs have begun to implement programs on HIV/AIDS education and sexuality for youth (Ford Foundation, 1994). More recently, the National AIDS Control Organization has initiated a program, 'University Talks AIDS,' targeted to college students. Thus, some sex educational programs have begun to be initiated. Several NGOs working with women are also undertaking reproductive and sexual health programs targeted to women including adolescent girls (Pachauri, 1994b).



III. Critical Factors for Effective Implementation of Reproductive Health Services

Health, Sexuality and Gender Information, Education and Counseling

Most government programs have generally ignored the fact that reproduction takes place through sexual relations, which are conditioned by broader gender relations. A review of conventional demographic and family planning literature illustrates that the population field has neglected issues related to sexuality, gender roles and relationships and has focused largely on outcomes, such as contraceptives safety and effectiveness, unwanted pregnancy, and more recently on infection. Clearly, social constructions of sexuality and gender relations impact on reproductive health. But, because they are generally considered to be politically sensitive, these issues have been neglected. A proposed approach is to place sexuality and gender relations at the center of reproductive health programs; to empower women to ensure that their health needs are addressed; and to encourage male participation by ensuring that men take responsibility for family planning, family support, and child rearing (Germain, et al, 1994). Given that the gender inequalities favor men in most societies in India, it is important to ensure men's involvement in these programs.

To date, most reproductive health programs have focused on women. Family planning programs have targeted women to achieve fertility reduction goals. Maternal and child health programs have also focused efforts on reaching women. Men have tended to be excluded and side-lined by these service programs. In their efforts to improve women's status and to empower women, NGOs have also focused exclusively on women. In fact, several women's NGOs have explicitly excluded men from their programs. While there was rationale for adopting this approach in the past, there are good reasons to make some changes now.

Education and counseling for women and men should form an integral component of all the interventions that are included in the recommended package of reproductive health services. A special effort should be made to strengthen these interventions as they have suffered neglect at the level of implementation in the Health and Family Welfare Programme.

Gender Sensitization of the Health Bureaucracy

The health care system in India is a bureaucratized, top-down, male dominated hierarchy. To date, women's voices have largely been missing from health policy debate. There is a growing concern among women health advocates that women's views and perspectives must be incorporated in policies and programs that are designed for them. In order to effectively

Strong advocacy efforts are needed to involve and empower a range of different constituencies, including activists, feminists, NGOs and researchers, to catalyze a process of networking with a growing number of organizations so that the reproductive health ideology and the ethos is effectively internalized and programs responsive to clients' needs are designed with the active involvement and participation of all.

integrate sexuality information and counseling with reproductive health programs in a 'gender-sensitive' way, not only is it important to make this an explicit job responsibility of all service providers at the various levels of the health care system, but it is also necessary to sensitize all health planners and service providers to gender issues. Clearly, a long-term process of gender sensitization and training will be needed to effect social change within the present rigid bureaucratic system.

Advocacy for Reproductive Health

Currently, there are major information gaps at all levels ranging from a lack of understanding of the ideology and the concept of reproductive health and gender issues to questions about what changes are needed at the policy and program level to implement services. This lack of information presents a major deterrent to implementing reproductive health programs. In a country as large and diverse as India, multiple constituencies must be informed and empowered before any process of change can be affected.

Advocacy programs are needed at the central and state levels to engage decision-makers in policy dialogue. A range of different constituencies including government and non-government organizations, as well as activists and researchers should be involved to catalyze a process of networking with a growing number of organizations in discussions on reproductive health and related family and gender issues so that there is common understanding about the concept as well as the design and implementation of services to address reproductive needs.

Establishment of Effective Referral Systems

The establishment of effective two-way referral systems between the community level and the

various levels within the health service system is critical for the effective implementation of reproductive health services. Such referral systems are needed for implementing all the health interventions included in the essential package of reproductive health services. It is of paramount importance to organize effective referral systems for saving women's lives during obstetric emergencies and for saving the lives of new born infants with complications. There are several examples of successful referral systems in the NGO sector (Pachauri, 1994b). The Panchayati Raj system provides an opportunity for mobilizing community leaders to help organize transportation for emergency referrals. Although the panchayats are presently nascent organizations that have yet to define their roles in implementing health programs and developing linkages with government and NGO institutions, these decentralized institutions have considerable potential for taking on this responsibility. The establishment of referral systems could be a starting point for developing linkages between the government's health service system, NGOs, the community and institutions of the *Panchayati Raj* for decentralizing planning and implementation so that health programs are accountable to the community and can more effectively address community needs.



IV. Conclusion

To translate the reproductive health concept into policies and programs, two important issues must be addressed: First, a paradigm shift is essential. A change in focus from a top-down, target-driven population control approach to a gender sensitive, client-based approach to address reproductive health needs, is necessary. Second, reproductive health programs must be designed to enhance access and improve the quality of services, particularly from the perspective of the user. There is a need to specially focus on women since they constitute the major client group or users of these programs and also have the greatest problem of access, both physical and social to health services. On the other hand, it is equally important to promote male responsibility and enhance the involvement of men.

Because there is tremendous diversity in India among the various regions and states and even within states as well as between urban and rural areas, no single package of services can be recommended. The framework proposed in this paper, could be used for defining reproductive health programs for different settings. The Government, NGOs and the private sector must work in partnership to promote reproductive health policies and programs. Strong advocacy efforts are needed to involve and empower a range of different constituencies, including activists, feminists, NGOs and researchers, to catalyze a process of networking with a growing number of organizations so that the reproductive health ideology and the ethos is effectively internalized and programs responsive to clients' needs are designed with the active involvement and participation of all.

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